CLAIMS

I claim:

5   1.   A method of maintaining session affinity in a server farm coupled to receive client requests, said server farm comprising multiple server groups, each server group comprising multiple clone servers, said method comprising the steps of:

(1) associating a collection of related client requests with a unique session identification code;

10   (2) responsive to receipt of a client request, determining to which of said server groups said client request can be dispatched;

(3) associating with said collection of requests sharing a session identification code a list of every server in said server farm that has serviced a request in said collection;

15   (4) responsive to receipt of a client request, determining if said list associated with said collection of requests to which said request belongs includes a server identification code that matches a server identification code of a server in said determined server group; and

(5) if a match is detected, dispatching said client request to said matched server.

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2. The method of claim 1 wherein step (3) comprises, upon routing of a client request in a session to a server that has not previously serviced a client request in said session, adding a unique server identification code corresponding to said server to a

list of server identification codes associated with said session, without deleting any

other server identification codes in said list;

3. The method of claim 2 wherein steps (1) and (3) comprise sending said

5 session identification code and said clone identification code, respectively, to a client

machine that issued said request so that said client machine can include said session

identification code and said clone identification code as part of future requests it issues

to said server farm.

10   4. The method of claim 3 wherein said list of server identification codes

forms part of said session identification code.

5. The method of claim 4 wherein said list of server identification codes is

appended to said session identification code.

15   6. The method of claim 5 wherein said session identification code is a

jsessionid in accordance with the Java Servlet 2.2 specification.

7. The method of claim 5 wherein said session identification code forms part

20 of a cookie associated with said session.

8. The method of claim 7 wherein said cookie forms part of said client

request.

9.   The method of claim 5 wherein said session identification code forms part of a Uniform Resource Identifier (URI) that forms part of said client request.

10.   The method of claim 4 wherein step (4) comprises the steps of:

(4.1) parsing said list in a manner so as to find matching server identification codes in the temporal order in which they were added to said list; and

(4.2) selecting the first matching server identification code detected.

11.   The method of claim 1 wherein step (4) comprises the steps of:

(4.1) searching said list in a predetermined order for matching server identification code, said predetermined order designed to encounter server identification codes in the temporal order in which they were added to said list;

(4.2) upon encountering a server identification code, determining if it matches a server identification code in said server group; and

(4.3) if a match is not detected, repeating steps (3.1) and (3.2).

12.   The method of claim 4 wherein step (3) comprises the steps of:

if said client request does not comprise a session identification code;

(3.1) creating a session for client requests received from the client issuing said client request;

(3.2) assigning a session identification code to said session;

(3.3) dispatching said client request to a particular server in said determined server group;

(3.4) appending the server identification code of said particular server to said session identification code; and

(3.5) communicating said session identification code with said server identification code to the client that issued said client request.

13. The method of claim 12 wherein step (3) further comprises the steps of:

when a client request is received that pertains to a particular server group and said client request comprises a session identification code, but said session identification code does not have appended thereto a server identification code corresponding to a server in said particular server group;

(3.6) dispatching said client request to a server in said particular server group;

(3.7) appending said server identification code corresponding to said server to said session identification code; and

(3.8) communicating said session identification code, including said newly appended server identification code, to the client that issued said client request.

14. The method of claim 13 wherein step (2) further comprises the steps of:

if a client request comprises a session identification code having appended thereto a server identification code corresponding to a particular server in said determined server group, but said particular server is unavailable to service said client request;

(3.9) dispatching said client request to a different server in said determined server group;

(3.10) appending a server identification code corresponding to said different server to said session identification code; and

5   (3.11) communicating said session identification code, including said newly appended server identification code, to the client that issued said client request.

15.   The method of claim 5 wherein step (3) further comprises the steps of:

if a client request comprises a session identification code having appended

10   thereto a server identification code corresponding to a particular server in said determined server group, but said particular server is unavailable to service said client request;

(3.9) dispatching said client request to a different server in said determined server group;

15   (3.10) appending a server identification code corresponding to said different server to said session identification code; and

(3.11) communicating said session identification code, including said newly appended server identification code, to the client that issued said client request.

20   16.   A computer readable product embodied on computer readable media readable by a computing device, said product for maintaining session affinity in a server farm coupled to receive client requests, said server farm comprising multiple

server groups, each server group comprising multiple server clones, said computer

program product comprising computer executable instructions for:

associating a collection of related client requests with a unique session

identification code;

5 responsive to receipt of a client request, determining to which of said server

groups said client request can be dispatched;

associating with said collection of requests sharing a session identification code

a list of every server in said server farm that has serviced a request in said collection;

responsive to receipt of a client request, determining if said list associated with

10 said collection of requests to which said request belongs includes a server

identification code that matches a server identification code of a server in said

determined server group; and

if a match is detected, dispatching said client request to said matched server.

15 17. The method of claim 16 wherein said computer executable instructions for

associating said list with said collection of requests comprises, upon routing of a client

request in a session to a server that has not previously serviced a client request in said

session, adding a unique server identification code corresponding to said server to a

list of server identification codes associated with said session, without deleting any

20 other server identification codes in said list;

18. The method of claim 17 wherein said computer executable instructions for

associating a collection of related client requests with a unique session identification

code and said computer executable instructions for associating said list with said

collection of requests comprise sending said session identification code and said clone

identification code, respectively, to a client machine that issued said request so that

said client machine can include said session identification code and said clone

5   identification code as part of future requests it issues to said server farm.

       19.   The computer readable product of claim 18 wherein said list of server

identification codes forms part of said session identification code.

10   20.   The computer readable product of claim 19 wherein said list of server

identification codes is appended to said session identification code.

       21.   The computer readable product of claim 19 wherein said session

identification code is a jsessionid in accordance with the Java Servlet 2.2 specification.

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       22.   The computer readable product of claim 19 wherein said session

identification code forms part of a cookie associated with said session.

       23.   The computer readable product of claim 22 wherein said cookie forms

20   part of said client request.

24.   The computer readable product of claim 19 wherein said session identification code forms part of a Uniform Resource Identifier (URI) that forms part of said client request.

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25.   The computer readable product of claim 18 wherein said computer executable instructions for determining if said list associated with said collection of requests to which said request belongs includes a server identification code that matches a server identification code of a server in said determined server group comprises computer executable instructions for:

10   parsing said list in a manner so as to find matching server identification codes in the temporal order in which they were added to said list; and

selecting the first matching server identification code detected.

26.   The computer readable product of claim 18 wherein said computer executable instructions for determining if said list includes a server identification code that matches a server identification code of a server in said determined server group comprises computer executable instructions for:

15   searching said list in a predetermined order for matching server identification code, said predetermined order designed to encounter server identification codes in the

20   temporal order in which they were added to said list;

upon encountering a server identification code, determining if it matches a server identification code in said server group; and

if a match is not detected, re-executing the searching and determining

instructions.

27.   The computer readable product of claim 19 wherein said computer

5   executable instructions for adding a unique server identification code comprises

computer executable instructions for:

if said client request does not comprise a session identification code;

creating a session for client requests received from the client issuing said

client request;

10   assigning a session identification code to said session;

dispatching said client request to a particular server in said determined

server group;

appending the server identification code of said particular server to said

session identification code; and

15   communicating said session identification code including said server

identification code, to the client that issued said client request.

28.   The computer readable product of claim 27 wherein said computer

executable instructions for adding a unique server identification code further comprises

20   computer executable instructions for:

when a client request is received that pertains to a particular server group and

said client request comprises a session identification code, but said session

identification code does not have appended thereto a server identification code

corresponding to a server in said particular server group;

      dispatching said client request to a server in said particular server group;

      appending said server identification code corresponding to said assigned

5   server to said session identification code; and

      communicating said session identification code, including said newly

appended server identification code, to the client that issued said client request.

      29.   The computer readable product of claim 28 wherein said computer

10 executable instructions for adding a unique server identification code comprises

computer executable instructions for:

      if a client request comprises a session identification code having appended

thereto a server identification code corresponding to a particular server in said

determined server group, but said particular server is unavailable to service said client

15 request;

      dispatching said client request to a different server in said determined server

group;

      appending a server identification code corresponding to said different server to

said session identification code; and

20   communicating said session identification code, including said newly appended

server identification code, to the client that issued said client request.